

WHAT IS CLAIMED IS:

1. A wireless communications device, comprising:

a communication sensitivity checking portion configured to check a sensitivity of at least one communications channel used to communicate with an external access point and to output a sensitivity signal; and

a power mode changing portion configured to change a power mode of the wireless communications device between a working mode and at least one sleep mode based on the sensitivity signal.
2. The apparatus of claim 1, wherein the power mode changing portion is configured to change a power mode of the wireless communications device into a working mode if the sensitivity signal indicates that the communications sensitivity is greater than a predefined reference value, and wherein the power mode changing portion is configured to change a power mode of the wireless communications device into a sleep mode if the sensitivity signal indicates that the communications sensitivity is less than a predefined sensitivity value.
3. The apparatus of claim 2, wherein the predefined sensitivity value can be changed by a user.

4. The apparatus of claim 2, wherein when the wireless communications device is in the sleep mode, both a transmission portion and a receive portion of the wireless device are put in a power down mode.

5. The apparatus of claim 2, wherein the power mode changing portion is configured to switch the power mode into a working mode once a predetermined time period elapses after the power mode has been switched to a sleep mode.

6. The apparatus of claim 5, wherein the length of the predetermined time period varies based on the value of the predefined sensitivity value.

7. The apparatus of claim 1, further comprising a data checking portion configured to determine whether data needs to be transmitted to an external access point and configured to output a data check signal, and wherein the power mode changing portion is also configured to change a power mode of the wireless communications device based on the data check signal.

8. The apparatus of claim 7, wherein the power changing mode portion is configured to change a power mode of the wireless communications device into a transmission sleep mode if the data check signal indicates that there is no data to be transmitted, and wherein the power changing mode portion is configured to change a power

mode of the wireless communications device into a working mode if the data check signal indicates that there is data to be transmitted.

9. The apparatus of claim 8, wherein when the wireless communications device is in the transmission sleep mode, only a transmission portion of wireless communications device is in a power down mode.

10. The apparatus of claim 1, wherein the wireless communication device is a wireless LAN module.

11. A wireless LAN module, comprising:
checking means for checking a communication sensitivity of at least one communications channel;
switching means for switching a power mode of the wireless LAN module to a power down mode if the checking means determines that a communication sensitivity is less than a predefined sensitivity value, and wherein the switching means is also configured to switch the power mode of the wireless LAN module to a normal mode after a predetermined delay period elapses after the power mode has been set to the power down mode.

12. The apparatus of claim 11, wherein the predefined sensitivity value is approximately 70 percent.

13. The apparatus of claim 11, wherein the switching means is configured such that if the checked communication sensitivity is more than the predefined sensitivity value, a power mode of a transmission block of the wireless LAN module is set to a power down mode if no data needs to be transmitted by the wireless LAN module.

14. The apparatus of claim 11, wherein if the checking means determines that a communications sensitivity is less than a first predetermined sensitivity value, the switching means switches the power mode of the wireless LAN module to a normal mode after a first predetermined delay period elapses after the power mode has been set to the power down mode, and wherein if the checking means determines that a communications sensitivity is less than a second predetermined sensitivity value, the switching means switches the power mode of the wireless LAN module to a normal mode after a second predetermined delay period elapses after the power mode has been set to the power down mode.

15. A power management method of a wireless LAN module, comprising:
setting up a communications channel of a wireless LAN network;
checking a communications sensitivity of the set channel; and
changing a power mode of the wireless LAN module to a sleep mode if the results of the checking step indicate that the communications sensitivity is less than a predetermined sensitivity value.

16. The method of claim 15, further comprising changing a power mode of the wireless LAN module back to a working mode after a predetermined delay period expires after the wireless LAN module is set to the sleep mode.

17. The method of claim 16, wherein if the result of the checking step indicates that the communications sensitivity is less than a first predetermined sensitivity value, the power mode of the wireless LAN module is changed back to the working mode after a first predetermined delay period expires, and wherein if the result of the checking step indicates that the communications sensitivity is less than a second predetermined sensitivity value, the power mode of the wireless LAN module is changed back to the working mode after a second predetermined delay period expires

18. The method of claim 15, wherein if the result of the checking step indicates that the communications sensitivity is greater than the predetermined sensitivity value, the method further comprises:

checking to determine if data must be transmitted by the wireless LAN module; and
changing a power mode of a transmission block of the wireless LAN module to a sleep mode if the results of the checking step indicate that no data must be transmitted.

19. A method of setting up a wireless LAN module to achieve power savings, comprising:

attempting to set up a wireless communications channel;

checking to determine if the channel was properly set up;
changing a power mode of the wireless LAN module to a power down mode if the result of the checking step indicates that the channel was not properly set up; and
changing a power mode of the wireless LAN module to a normal mode after a predetermined delay period expires after the power mode of the wireless LAN module is set to the power down mode.

20. The method of claim 19, wherein if a communications channel is not successfully set up after a predetermined number of setup attempts are made, method further comprises:

changing the power mode of the wireless LAN module to the power down mode;
and

changing a power mode of the wireless LAN module to a normal mode after a second predetermined delay period expires after the power mode of the wireless LAN module is set to the power down mode, wherein the second predetermined delay period is longer than the predetermined delay period used after an unsuccessful setup attempt.